

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

09 / 831240

WEST Search History

Hide Items

Restore

Clear

Cancel

DATE: Wednesday, September 01, 2004

Hide?	<u>Set</u> Name	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=PGPB,USPT; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L11	l3 and (shading or shade) same texture and opaque same (z or depth) same test and close\$2	3
<input type="checkbox"/>	L10	(shade or shading) same textur\$3 same (opaque or opacity) same test\$3 and close\$2 and image same plane	0
<input type="checkbox"/>	L9	(depth or z)same test\$3 same (opaque or opacity)same object same surface	11
<input type="checkbox"/>	L8	(depth or z)same teast\$3 same (opaque or opacity)same object same surface	0
<input type="checkbox"/>	L7	l1 and (shading or shade) and opaque same (z or depth) same test and close\$2	2
<input type="checkbox"/>	L6	345/582.ccls.	599
<input type="checkbox"/>	L5	345/441.ccls.	721
<input type="checkbox"/>	L4	345/424.ccls.	270
<input type="checkbox"/>	L3	345/421.ccls.	363
<input type="checkbox"/>	L2	345/422.ccls.	358
<input type="checkbox"/>	L1	345/426.ccls.	525

END OF SEARCH HISTORY

Day : Wednesday

Date: 9/1/2004

Time: 16:46:32


PALM INTRANET
Inventor Name Search Result

Your Search was:

Last Name = DUNN

First Name = MARK

Application#	Patent#	Status	Date Filed	Title	Inventor Name 28
<u>60462238</u>	Not Issued	159	04/10/2003	METHODS AND COMPOSITIONS FOR INCREASING THE ANAEROBIC WORKING CAPACITY IN TISSUES	DUNNETT, MARK
<u>60131640</u>	Not Issued	159	04/26/1999	HIGH EFFICIENCY MODULAR VACUUM APPARATUS	DUNN , MARK R.
<u>10844009</u>	Not Issued	030	05/12/2004	OPTICAL FIBRE CONNECTOR	DUNN, MARK JEFFREY
<u>10717217</u>	Not Issued	030	11/18/2003	METHODS AND COMPOSITIONS FOR INCREASING THE ANAEROBIC WORKING CAPACITY IN TISSUES	DUNNETT, MARK
<u>10355569</u>	Not Issued	061	01/31/2003	VEHICLE DOOR-TO-BODY ATTACHMENT APPARATUS AND METHOD	DUNNEBACK, MARK R.
<u>10310782</u>	Not Issued	030	12/06/2002	LAMINATED METALS SHEET COMPOSITE AND METHOD FOR MAKING SUCH SHEET	DUNNEBACK, MARK
<u>10209169</u>	<u>6680294</u>	150	07/30/2002	METHODS AND COMPOSITIONS FOR INCREASING THE ANAEROBIC WORKING CAPACITY IN TISSUES	DUNNETT, MARK
<u>09831240</u>	Not Issued	080	05/03/2001	SHADING AND TEXTURING 3-DIMENSIONAL COMPUTER GENERATED IMAGES	DUNN, MARK
<u>09757782</u>	<u>6426361</u>	150	01/09/2001	METHOD AND COMPOSITIONS FOR INCREASING THE	DUNNETT, MARK

				ANAEROBIC WORKING CAPACITY IN TISSUES	
<u>09688403</u>	Not Issued	161	10/16/2000	CELL LINES FOR THE TREATMENT AND DIAGNOSIS OF HYPOGLYCAEMIA OF INFANCY AND DIABETES	DUNNE, MARK
<u>09685510</u>	6382707	150	10/09/2000	REINFORCED DOOR ASSEMBLY FOR A MOTOR VEHICLE	DUNNEBACK, MARK R.
<u>09559850</u>	Not Issued	161	04/27/2000	HIGH EFFICIENCY MODULAR VACCUUM APPARATUS	DUNN, MARK R.
<u>09486975</u>	6372501	150	05/04/2000	GLUCOSE RESPONSIVE BETA-CELL LINE	DUNNE, MARK
<u>09237829</u>	6334179	150	01/27/1999	DSP COPROCESSOR HAVING CONTROL FLAGS MAPPED TO A DUAL PORT SECTION OF MEMORY FOR COMMUNICATING WITH THE HOST	DUNN , MARK
<u>09076353</u>	6173882	150	05/12/1998	METHOD AND APPARATUS FOR HOLDING A WORKPIECE DURING WELDING	DUNNEBACK , MARK R.
<u>09050564</u>	6313846	150	03/30/1998	TEXTURING AND SHADING OF 3-D IMAGES	DUNN , MARK EDWARD
<u>08928955</u>	6330000	150	09/12/1997	TEXTURING AND SHADING OF 3-D IMAGES	DUNN , MARK EDWARD
<u>08909513</u>	5965596	150	08/12/1997	METHODS AND COMPOSITIONS FOR INCREASING THE ANAEROBIC WORKING IN TISSUE	DUNNETT , MARK
<u>08628126</u>	5693903	150	04/04/1996	APPARATUS AND METHOD FOR ANALYING VOCAL AUDIO DATA TO PROVIDE ACCOMPANIMENT TO A VOCALIST	DUNN , MARK E.
<u>08593649</u>	Not Issued	161	01/29/1996	TEXTURING AND SHADING OF 3-D IMAGES	DUNN , MARK E.
<u>08461429</u>	5491751	150	06/05/1995	INTELLIGENT ACCOMPANIMENT APPARATUS AND METHOD	DUNN , MARK E.
<u>08393188</u>	Not Issued	161	02/23/1995	SUPERCRAPS	DUNN , MARK D.

<u>08383965</u>	<u>5585585</u>	150	02/06/1995	AUTOMATED ACCOMPANIMENT APPARATUS AND METHOD	DUNN , MARK E.
<u>08261161</u>	<u>5455378</u>	150	06/17/1994	INTELLIGENT ACCOMPANIMENT APPARATUS AND METHOD	DUNN , MARK E.
<u>08065831</u>	<u>5521323</u>	150	05/21/1993	REAL-TIME PERFORMANCE SCORE MATCHING	DUNN , MARK E.
<u>07281742</u>	<u>5020396</u>	150	02/17/1989	CHAIN LUMPER	DUNN , MARK M.
<u>06759389</u>	<u>4637556</u>	150	07/26/1985	HIGH EFFICIENCY SEPARATOR SYSTEM	DUNN , MARK R.
<u>06669145</u>	<u>4640464</u>	250	11/07/1984	ROLLER MILL CONTROL SYSTEM	DUNN , MARK R.

Inventor Search Completed: No Records to Display.

Search Another: Inventor	Last Name	First Name	<input type="button" value="Search"/>
	<input type="text" value="DUNN"/>	<input type="text" value="MARK"/>	

To go back use Back button on your browser toolbar.

Back to [PALM](#) | [ASSIGNMENT](#) | [OASIS](#) | [Home page](#)



US Patent & Trademark Office

[Subscribe \(Full Service\)](#) [Register \(Limited Service, Free\)](#) [Login](#)

 Search: ☒ The ACM Digital Library ☐ The Guide

+shading +and +texture +and +depth +test opaque object su



THE ACM DIGITAL LIBRARY


[Feedback](#) [Report a problem](#) [Satisfaction survey](#)

Terms used

shading and texture and depth test opaque object surface

Found 304 of 141,680

Sort results by

relevance

Display results

expanded form

[Save results to a Binder](#)[Search Tips](#)☐ Open results in a new window[Try an Advanced Search](#)[Try this search in The ACM Guide](#)

Results 1 - 20 of 200

Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)

Best 200 shown

Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Three-dimensional medical imaging: algorithms and computer systems](#)

M. R. Stytz, G. Frieder, O. Frieder

December 1991 **ACM Computing Surveys (CSUR)**, Volume 23 Issue 4

Full text available: pdf(7.38 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

Keywords: Computer graphics, medical imaging, surface rendering, three-dimensional imaging, volume rendering

2 [Point-based rendering: Hardware-accelerated point-based rendering of complex scenes](#)

Livu Coconu, Hans-Christian Hege

July 2002 **Proceedings of the 13th Eurographics workshop on Rendering**

Full text available: pdf(1.33 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

High quality point rendering methods have been developed in the last years. A common drawback of these approaches is the lack of hardware support. We propose a novel point rendering technique that yields good image quality while fully making use of hardware acceleration. Previous research revealed various advantages and drawbacks of point rendering over traditional rendering. Thus, a guideline in our algorithm design has been to allow both primitive types simultaneously and dynamically choose the ...

3 [Delay streams for graphics hardware](#)

Timo Aila, Ville Miettinen, Petri Nordlund

July 2003 **ACM Transactions on Graphics (TOG)**, Volume 22 Issue 3

Full text available: pdf(1.67 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In causal processes decisions do not depend on future data. Many well-known problems, such as occlusion culling, order-independent transparency and edge antialiasing cannot be properly solved using the traditional causal rendering architectures, because future data may change the interpretation of current events. We propose adding a *delay stream* between the vertex and pixel processing units. While a triangle resides in the delay stream, subsequent triangles generate occlusion information. ...


Keywords: 3D graphics hardware, antialiasing, occlusion culling, order-independent

transparency, stream processing

4 On the power of the frame buffer

Alain Fournier, Donald Fussell

April 1988 **ACM Transactions on Graphics (TOG)**, Volume 7 Issue 2

Full text available:  [pdf\(1.95 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Raster graphics displays are almost always refreshed out of a frame buffer in which a digital representation of the currently visible image is kept. The availability of the frame buffer as a two-dimensional memory array representing the displayable area in a screen coordinate system has motivated the development of algorithms that take advantage of this memory for more than just picture storage. The classic example of such an algorithm is the depth buffer algorithm for determining visible s ...

5 Rendering CSG models with a ZZ-buffer

David Salesin, Jorge Stolfi

September 1990 **ACM SIGGRAPH Computer Graphics , Proceedings of the 17th annual conference on Computer graphics and interactive techniques**, Volume 24 Issue 4

Full text available:  [pdf\(2.32 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The ZZ-buffer is a simple acceleration scheme for ray tracing that can be applied to a wide variety of scenes, including those with small features, textured and transparent surfaces, shadows and penumbræ, and depth-of-field effects. In this paper, we describe how the ZZ-buffer algorithm can be adapted to the rendering of scenes defined by constructive solid geometry operations.

6 Multiprocessor experiments for high-speed ray tracing

Severin Gaudet, Richard Hobson, Pradeep Chilka, Thomas Calvert

July 1988 **ACM Transactions on Graphics (TOG)**, Volume 7 Issue 3

Full text available:  [pdf\(2.82 MB\)](#)


Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

New single- and multiprocessor models for ray tracing are presented. Important features are (1) the use of custom VLSI building blocks, (2) the use of a modified hierarchical data-structure-based ray tracing algorithm with three disjoint data sets, and (3) scene access through adaptive information broadcasting. A modular design is presented that permits incremental performance enhancement up to two orders of magnitude over conventional minicomputers or workstations. Ray tracing is a surpris ...

7 The partial-occlusion effect: utilizing semitransparency in 3D human-computer interaction

Shumin Zhai, William Buxton, Paul Milgram

September 1996 **ACM Transactions on Computer-Human Interaction (TOCHI)**, Volume 3 Issue 3

Full text available:  [pdf\(6.54 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This study investigates human performance when using semitransparent tools in interactive 3D computer graphics environments. The article briefly reviews techniques for presenting depth information and examples of applying semitransparency in computer interface design. We hypothesize that when the user moves a semitransparent surface in a 3D environment, the "partial-occlusion" effect introduced through semitransparency acts as an effective cue in target localization—an ess ...

Keywords: 3D interfaces, depth perception, partial occlusion, semitransparency, stereopsis

8 Hardware: Hardware-accelerated parallel non-photorealistic volume rendering

Eric B. Lum, Kwan-Liu Ma

June 2002 **Proceedings of the 2nd international symposium on Non-photorealistic animation and rendering**

Full text available:  pdf(12.03 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


Non-photorealistic rendering can be used to illustrate subtle spatial relationships that might not be visible with more realistic rendering techniques. We present a parallel hardware-accelerated rendering technique, making extensive use of multi-texturing and paletted textures, for the interactive non-photorealistic visualization of scalar volume data. With this technique, we can render a 512x512x512 volume using non-photorealistic techniques that include tone-shading, silhouettes, gradient-base ...

Keywords: interactive visualization, non-photorealistic rendering, parallel rendering, scientific visualization, silhouette, texture graphics hardware, visual perception, volume rendering

9 Image-driven simplification

Peter Lindstrom, Greg Turk

July 2000 **ACM Transactions on Graphics (TOG)**, Volume 19 Issue 3

Full text available:  pdf(1.98 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


We introduce the notion of image-driven simplification, a framework that uses images to decide which portions of a model to simplify. This is a departure from approaches that make polygonal simplification decisions based on geometry. As with many methods, we use the edge collapse operator to make incremental changes to a model. Unique to our approach, however, is the use at comparisons between images of the original model against those of a simplified model to determine the ...

Keywords: image metrics, level-of-detail, polygonal simplification, visual perception

10 The relative contributions of stereo, lighting, and background scenes in promoting 3D depth visualization

Geoffrey S. Hubona, Philip N. Wheeler, Gregory W. Shirah, Matthew Brandt

September 1999 **ACM Transactions on Computer-Human Interaction (TOCHI)**, Volume 6 Issue 3

Full text available:  pdf(1.59 MB)


Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

Keywords: 3D user interfaces, cue theory, depth perception, shadows, stereoscopic viewing

11 A Characterization of Ten Hidden-Surface Algorithms

Evan E. Sutherland, Robert F. Sproull, Robert A. Schumacker


January 1974 **ACM Computing Surveys (CSUR)**, Volume 6 Issue 1

Full text available:  pdf(4.47 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

12 Two methods for display of high contrast images

Jack Tumblin, Jessica K. Hodgins, Brian K. Guenter

January 1999 **ACM Transactions on Graphics (TOG)**, Volume 18 Issue 1Full text available:  pdf(10.28 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

High contrast images are common in night scenes and other scenes that include dark shadows and bright light sources. These scenes are difficult to display because their contrasts greatly exceed the range of most display devices for images. As a result, the image contrasts are compressed or truncated, obscuring subtle textures and details. Humans view and understand high contrast scenes easily, "adapting" their visual response to avoid compression or truncation with no apparent ...

Keywords: adaptation, tone reproduction, visual appearance**13 Rendering: Real-time painterly rendering for MR applications**

Michael Haller, Daniel Sperl

June 2004 **Proceedings of the 2nd international conference on Computer graphics and interactive techniques in Australasia and South East Asia**Full text available:  pdf(936.79 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper we describe a real-time system for AR/MR rendering applications in a painterly style. Impressionistic images are created using a large number of brush strokes, which are organized as 3d particles to achieve frame-to-frame coherence. Reference pictures are used to compute the properties of each stroke. The presented technique is based on B. J. Meier's "Painterly Rendering for Animation". We modified the algorithm of Meier for real-time AR/MR environments by extensively using modern 3 ...

Keywords: augmented reality, mixed reality, non-photorealistic rendering, painterly rendering**14 Contributions: Computer-aided definition, manipulation and depiction of objects composed of spheres**


K. Knowlton

April 1981 **ACM SIGGRAPH Computer Graphics**, Volume 15 Issue 1Full text available:  pdf(2.31 MB)Additional Information: [full citation](#), [abstract](#), [references](#)

As previously demonstrated by Badler and O'Rourke, a variety of 3-D objects can be defined conveniently as collections of spheres-having various sizes and positions in 3-D space and possibly intersecting. This paper is an elaboration on the technique, describing methods of constructing and manipulating such objects and, most particularly, a method of achieving realism in rendering the picture-even though, for reasons of efficiency, computation is performed as if everything were 2-dimensional, wi ...

15 Computer-aided definition, manipulation and depiction of objects composed of spheres

K. Knowlton

December 1981 **ACM SIGGRAPH Computer Graphics**, Volume 15 Issue 4Full text available:  pdf(2.10 MB)Additional Information: [full citation](#), [abstract](#), [references](#)

As previously demonstrated by Badler and O'Rourke, a variety of 3-D objects can be defined conveniently as collections of spheres-having various sizes and positions in 3-D space and possibly intersecting. This paper is an elaboration on the technique, describing methods of constructing and manipulating such objects and, most particularly, a method of achieving

realism in rendering the picture-even though, for reasons of efficiency, computation is performed as if everything were 2-dimensional, wi ...

16 Visibility culling using hierarchical occlusion maps

Hansong Zhang, Dinesh Manocha, Tom Hudson, Kenneth E. Hoff

August 1997 **Proceedings of the 24th annual conference on Computer graphics and interactive techniques**


Full text available:  pdf(597.69 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: hierarchical data structures, image pyramid, interactive display, occlusion culling, visibility culling

17 Session P3: volume visualization I: Volume clipping via per-fragment operations in texture-based volume visualization

Daniel Weiskopf, Klaus Engel, Thomas Ertl

October 2002 **Proceedings of the conference on Visualization '02**

Full text available:  pdf(2.62 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We propose new clipping methods that are capable of using complex geometries for volume clipping. The clipping tests exploit per-fragment operations on the graphics hardware to achieve high frame rates. In combination with texture-based volume rendering, these techniques enable the user to interactively select and explore regions of the data set. We present depth-based clipping techniques that analyze the depth structure of the boundary representation of the clip geometry to decide which parts o ...

Keywords: clipping, hardware acceleration, volume rendering

18 Billboard clouds for extreme model simplification

Xavier Décorêt, Frédo Durand, François X. Sillion, Julie Dorsey

July 2003 **ACM Transactions on Graphics (TOG)**, Volume 22 Issue 3

Full text available:  pdf(2.52 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We introduce *billboard clouds* -- a new approach for extreme simplification in the context of real-time rendering. 3D models are simplified onto a set of planes with texture and transparency maps. We present an optimization approach to build a billboard cloud given a geometric error threshold. After computing an appropriate density function in plane space, a greedy approach is used to select suitable representative planes. A good surface approximation is ensured by favoring planes that are ...

Keywords: LOD, billboard, error-driven simplification, image-based rendering, model simplification, real-time rendering

19 Illustrating transparent surfaces with curvature-directed strokes

Victoria Interrante, Henry Fuchs, Stephen Pizer

October 1996 **Proceedings of the 7th conference on Visualization '96**

Full text available:  pdf(3.52 MB)  Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)
[Publisher Site](#)

Simplifying complex environments using incremental textured depth meshes

Andrew Wilson, Dinesh Manocha

July 2003 **ACM Transactions on Graphics (TOG)**, Volume 22 Issue 3

Full text available:  pdf(3.84 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We present an incremental algorithm to compute image-based simplifications of a large environment. We use an optimization-based approach to generate samples based on scene visibility, and from each viewpoint create textured depth meshes (TDMs) using sampled range panoramas of the environment. The optimization function minimizes artifacts such as skins and cracks in the reconstruction. We also present an encoding scheme for multiple TDMs that exploits spatial coherence among different viewpoints. ...

Keywords: interactive display, simplification, spatial encoding, textured depth meshes, walkthrough

Results 1 - 20 of 200

Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)

The ACM Portal is published by the Association for Computing Machinery. Copyright © 2004 ACM, Inc.

[Terms of Usage](#) [Privacy Policy](#) [Code of Ethics](#) [Contact Us](#)

Useful downloads:  [Adobe Acrobat](#)  [QuickTime](#)  [Windows Media Player](#)  [Real Player](#)

[IEEE HOME](#) | [SEARCH IEEE](#) | [SHOP](#) | [WEB ACCOUNT](#) | [CONTACT IEEE](#)[Membership](#) | [Publications/Services](#) | [Standards](#) | [Conferences](#) | [Careers/Jobs](#)Welcome
United States Patent and Trademark Office[Help](#) | [FAQ](#) | [Terms](#) | [IEEE Peer Review](#)[Quick Links](#)

Welcome to IEEE Xplore®

- ☐ Home
- ☐ What Can I Access?
- ☐ Log-out

Tables of Contents

- ☐ Journals & Magazines
- ☐ Conference Proceedings
- ☐ Standards

Search

- ☐ By Author
- ☐ Basic
- ☐ Advanced

Member Services

- ☐ Join IEEE
- ☐ Establish IEEE Web Account
- ☐ Access the IEEE Member Digital Library

IEEE Enterprise

- ☐ Access the IEEE Enterprise File Cabinet

Print Format

[Home](#) | [Log-out](#) | [Journals](#) | [Conference Proceedings](#) | [Standards](#) | [Search by Author](#) | [Basic Search](#) | [Advanced Search](#) | [Join IEEE](#) | [Web Account](#) | [New this week](#) | [OPAC Linking Information](#) | [Your Feedback](#) | [Technical Support](#) | [Email Alerting](#) | [No Robots Please](#) | [Release Notes](#) | [IEEE Online Publications](#) | [Help](#) | [FAQ](#) | [Terms](#) | [Back to Top](#)

Your search matched **1** of **1067317** documents.A maximum of **500** results are displayed, **15** to a page, sorted by **Relevance Descending** order.

Refine This Search:

You may refine your search by editing the current search expression or enter a new one in the text box.

☐ Check to search within this result set

Results Key:

JNL = Journal or Magazine **CNF** = Conference **STD** = Standard**1 Illustrating transparent surfaces with curvature-directed strokes***Interrante, V.; Fuchs, H.; Pizer, S.;*

Visualization '96. Proceedings. , 27 Oct.-1 Nov. 1996

Pages:211 - 218, 487

[\[Abstract\]](#) [\[PDF Full-Text \(1064 KB\)\]](#) **IEEE CNF**